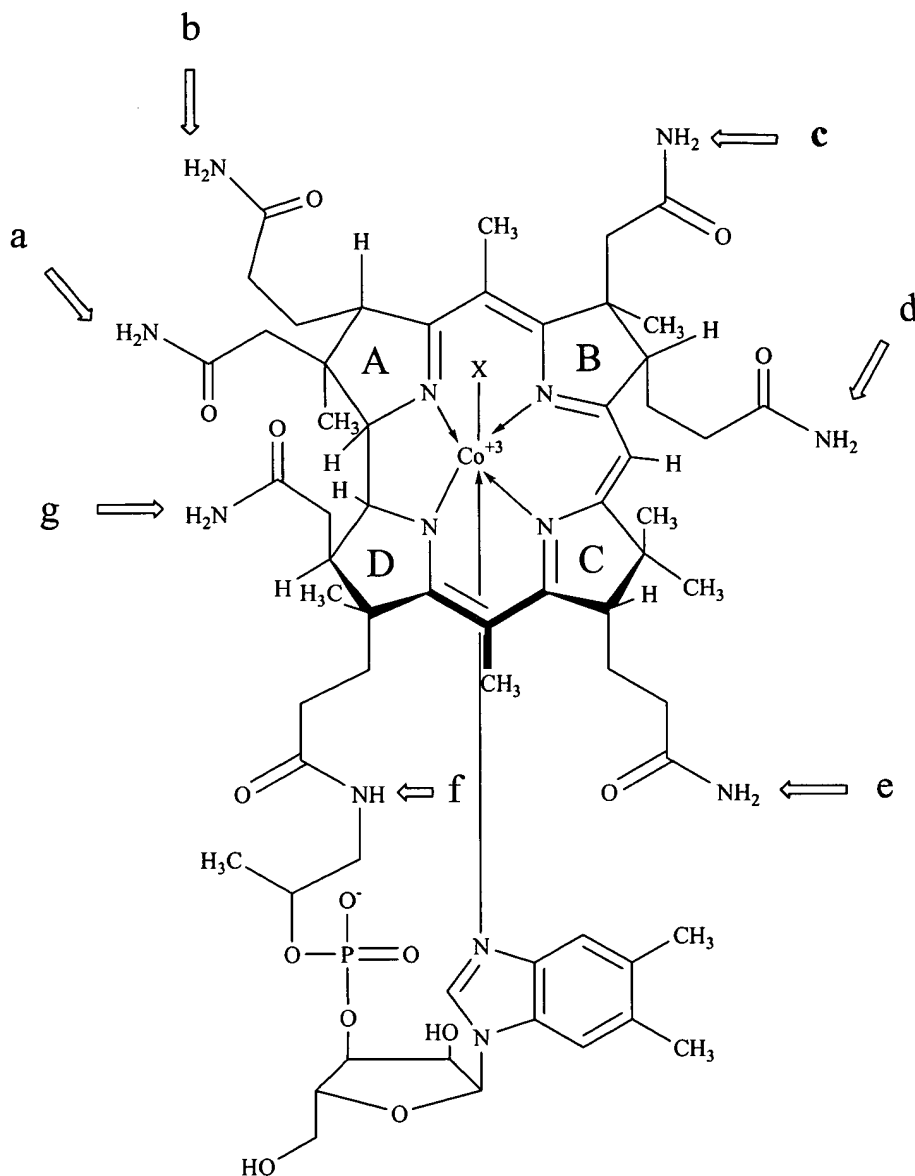


REPLACEMENT CLAIM SET

- 1) A compound of formula I



I

linked to a molecule comprising B-10, wherein X is CN, OH, CH₃, adenosyl or a molecule comprising B-10 and optionally linked to a linker comprising a detectable radionuclide or a therapeutic radionuclide; or a pharmaceutically acceptable salt thereof.

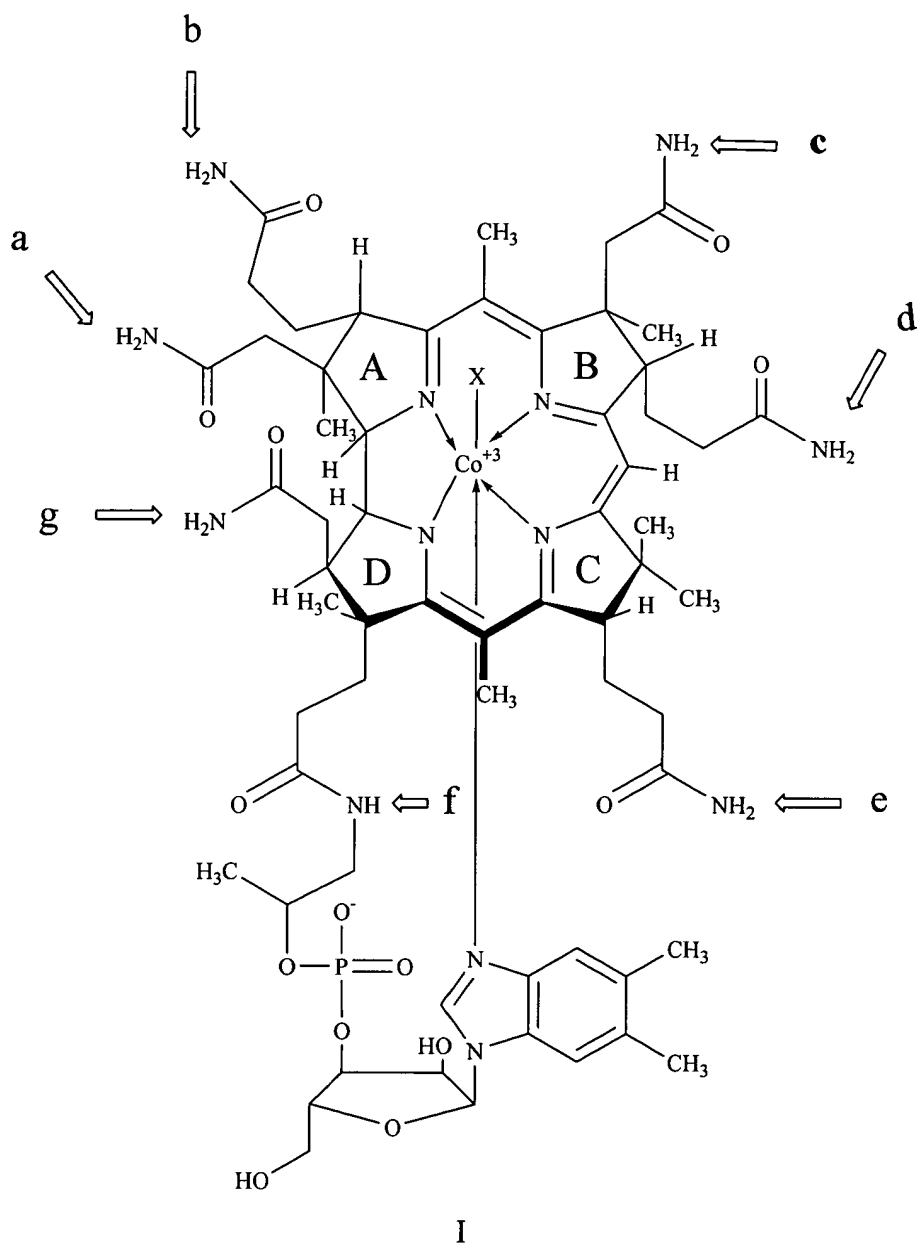
- 2) The compound of claim 1, wherein the molecule comprising B-10 is directly linked to the 6-position of the compound of formula I or is directly linked to the b, d or e-carboxamide group of the compound of formula I.
- 3) The compound of claim 1, wherein the molecule comprising B-10 is linked by a linker to the 6-position of the compound of formula I or is linked by a linker to the b, d or e-carboxamide group of the compound of formula I.
- 4) The compound of claim 1, wherein the molecule comprising B-10 is linked to the b-carboxamide group of the compound of formula I.
- 5) The compound of claim 1, wherein the molecule comprising B-10 is linked to the d-carboxamide group of the compound of formula I.
- 6) The compound of claim 1, wherein the molecule comprising B-10 is linked to the e-carboxamide group of the compound of formula I.
- 7) The compound of claim 1, wherein the molecule comprising B-10 is linked to the b-carboxamide group and a second molecule comprising B-10 is linked to the d-carboxamide group of the compound of formula I.
- 8) The compound of claim 1, wherein molecule comprising B-10 is linked to the 6-position of the compound of formula I.

- C2 9) The compound of claim 1, wherein the molecule comprising B-10 contains 1 to about 20 boron atoms, inclusive.

- 10) The compound of claim 1, wherein the molecule comprising B-10 is an amino acid, a carbohydrate, a nucleoside or a carborane.
- 11) The compound of claim 1, wherein the molecule comprising B-10 is o-carborane, m-carborane or p-carborane.
- 12) The compound of claim 1, wherein the molecule comprising B-10 is o-carborane.
- 13) The compound of claim 3, wherein at least one linker is of the formula W-A-Q wherein A is (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₃-C₈)cycloalkyl, or (C₆-C₁₀)aryl, wherein W and Q are each independently -N(R)C(=O)-, -C(=O)N(R)-, -OC(=O)-, -C(=O)O-, -O-, -S-, -S(O)-, -S(O)₂-, -N(R)-, -C(=O)-, or a direct bond; wherein each R is independently H or (C₁-C₆)alkyl.

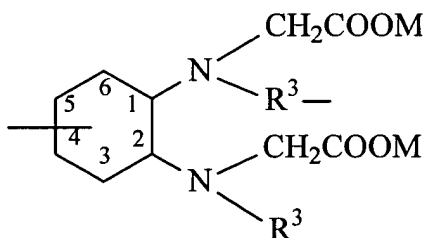
- 14) The compound of claim 13, wherein W is NH₂ or COOH and Q is NH₂ or COOH.
- 15) The compound of claim 13, wherein A is (C₁-C₆)alkyl.
- 16) The compound of claim 3, wherein at least one linker is about 5 angstroms to about 50 angstroms, inclusive.
- 17) The compound of claim 3, wherein at least one linker comprises a therapeutic radionuclide or a diagnostic radionuclide.
- 18) The compound of claim 17, wherein the therapeutic radionuclide is a metallic radionuclide.
- 19) The compound of claim 17, wherein the diagnostic radionuclide is a metallic radionuclide.
- 20) The compound of claim 17, wherein the diagnostic radionuclide is a non-metallic radionuclide.
- 21) The compound of claim 3, wherein at least one linker is a divalent radical formed from a peptide.
- 22) The compound of claim 3, wherein at least one linker is a divalent radical formed from an amino acid.
- 23) The compound of claim 3, wherein at least one linker is poly-L-glutamic acid, poly-L-aspartic acid, poly-L-histidine, poly-L-ornithine, poly-L-serine, poly-L-threonine, poly-L-tyrosine, poly-L-leucine, poly-L-lysine-L-phenylalanine, poly-L-lysine or poly-L-lysine-L-tyrosine.
- 24) The compound of claim 1, wherein the compound of formula I is also linked to a linker comprising a detectable radionuclide or a therapeutic radionuclide.

25) A compound of formula I



linked to one or more groups of the formula Q-L-W-Det, wherein X is CN, OH, CH_3 , adenosyl, a molecule comprising B-10 or Q-L-W-Det; wherein Det is a chelating group comprising Gd-157; L is a linker or absent; and W and Q are each independently -N(R)C(=O)-, -C(=O)N(R)-, -OC(=O)-, -C(=O)O-, -O-, -S-, -S(O)-, -S(O)₂-, -N(R)-, -C(=O)-, or a direct bond; wherein each R is independently H or (C₁-C₆)alkyl; or a pharmaceutically acceptable salt thereof.

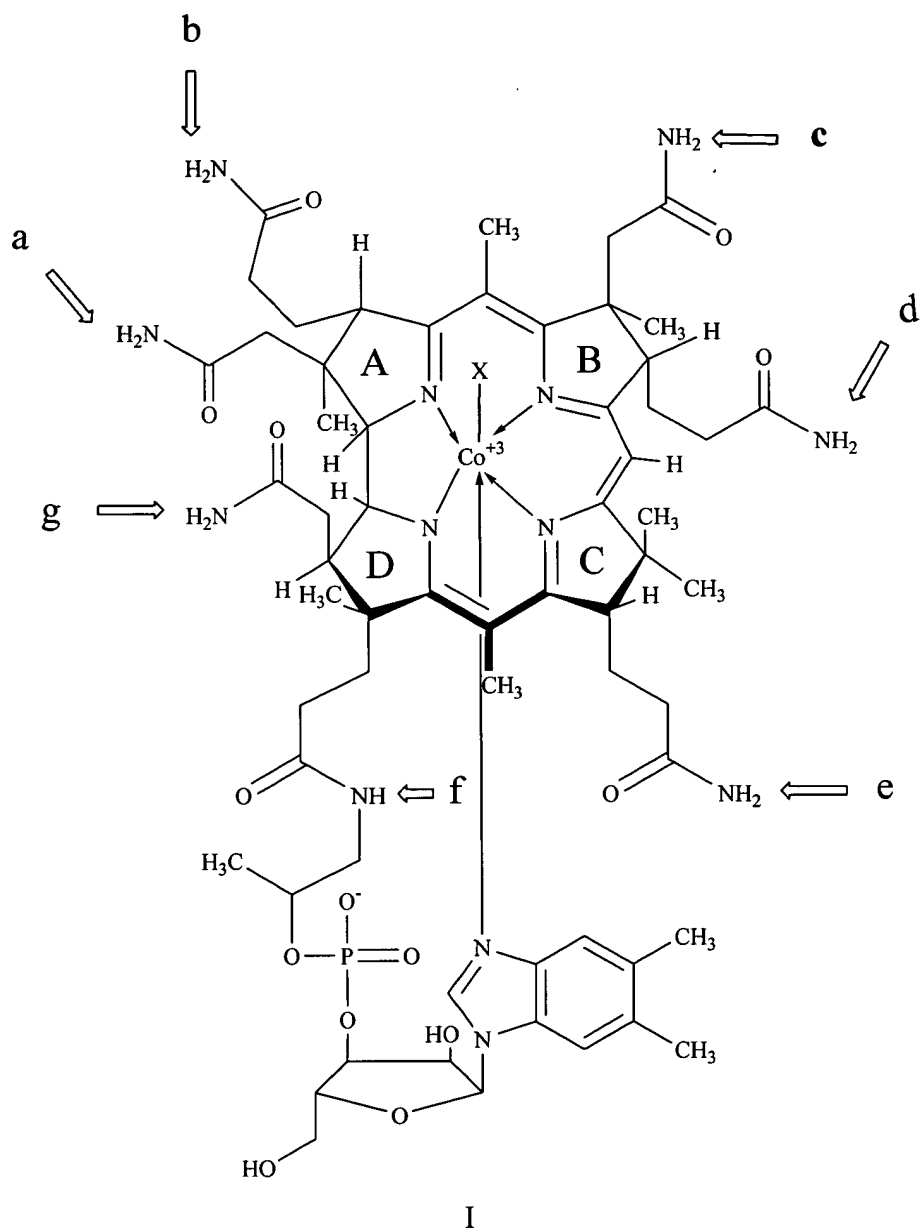
- 26) The compound of claim 25, wherein the group of the formula Q-L-W-Det is linked to the b-carboxamide group, d-carboxamide group, e-carboxamide group or the 6-position of the compound of formula I.
- 27) The compound of claim 25, wherein the group of the formula Q-L-W-Det is linked to the b-carboxamide group and a second group of the formula Q-L-W-Det is linked to the d-carboxamide group of the compound of formula I.
- 28) The compound of claim 25, wherein the group of the formula Q-L-W-Det is between about 20 and about 500 angstroms, inclusive, in length.
- 29) The compound of claim 25, wherein at least one chelating group is ethylenediaminetetraacetic acid (EDTA); diethylenetriaminepentaacetic acid (DTPA); 1,4,7,10-tetraazacyclododecane-N,N',N'',N'''-tetraacetic acid (DOTA); 1,4,8,11-tetraazacyclotetradecane-N,N',N'',N'''-tetraacetic acid (TETA); 1,4,8,12-tetraazacyclopentadecane-N,N',N'',N'''-tetraacetic acid (15N4); 1,4,7-triazacyclononane-N,N',N''-triacetic acid (9N3); 1,5,9-triazacyclododecane-N,N',N''-triacetic acid (12N3); N-[N-[N-[(benzoylthio) acetyl]glycyl]glycyl]glycine (MAG3); or a cyclohexane-based metal chelator (DCTA) of the formula



wherein R³ may be (C₁-C₄)alkyl or CH₂CO₂-.

- 30) The compound of claim 25, wherein at least one chelating group is diethylenetriaminepentaacetic acid (DTPA) comprising Gd-157.

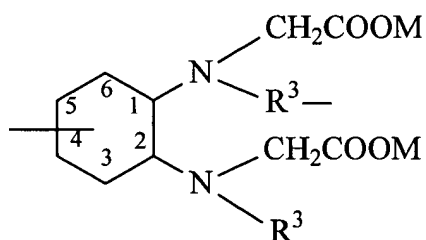
31) A compound of formula I



linked to a molecule comprising B-10; wherein the compound of formula I is linked to a group of the formula Q-L-W-Det, wherein X is CN, OH, CH₃, adenosyl, a molecule comprising B-10 or Q-L-W-Det; wherein

- a) Det is a chelating group comprising a therapeutic radionuclide or a diagnostic radionuclide;
- b) L is a linker or absent; and

- c) Q and W are each independently $-N(R)C(=O)-$, $-C(=O)N(R)-$, $-OC(=O)-$, $-C(=O)O-$, $-O-$, $-S-$, $-S(O)-$, $-S(O)_2-$, $-C(=O)-$, $-N(R)-$, or a direct bond; wherein each R is independently H or (C_1-C_6) alkyl;
or a pharmaceutically acceptable salt thereof.
- 32) The compound of claim 31, wherein at least one of the radionuclides is Tc^{99m} , In^{111} , In^{110} , Gd^{157} or Y^{86} .
- 33) The compound of claim 31, wherein a molecule comprising B-10 is linked to a b-carboxamide group, d-carboxamide group, e-carboxamide group or the 6-position of the compound of formula I.
- 34) The compound of claim 31, wherein at least one chelating group is ethylenediaminetetraacetic acid (EDTA); diethylenetriaminepentaacetic acid (DTPA); 1,4,7,10-tetraazacyclododecane- N,N',N'',N''' -tetraacetic acid (DOTA); 1,4,8,11-tetraazacyclotetradecane- N,N',N'',N''' -tetraacetic acid (TETA); 1,4,8,12-tetraazacyclopentadecane- N,N',N'',N''' -tetraacetic acid (15N4); 1,4,7-triazacyclononane- N,N',N'' -triacetic acid (9N3); 1,5,9-triazacyclododecane- N,N',N'' -triacetic acid (12N3); $N-[N-[N-[(benzoylthio) acetyl]glycyl]glycyl]glycine$ (MAG3); or a cyclohexane-based metal chelator (DCTA) of the formula

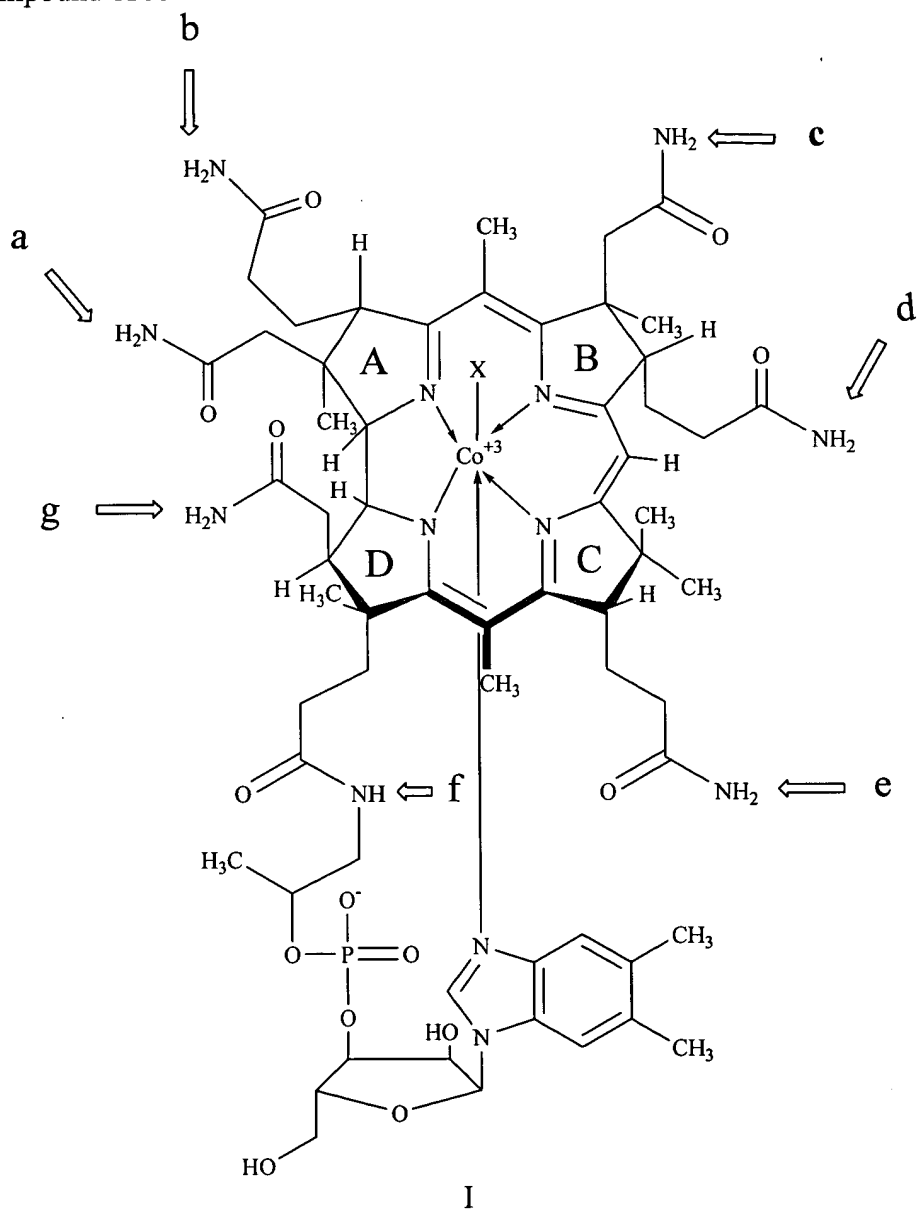


- wherein R^3 may be (C_1-C_4) alkyl or CH_2CO_2- .
- 35) The compound of claim 31, wherein at least one chelating group is diethylenetriaminepentaacetic acid (DTPA) comprising $Gd-157$.
- 36) The compound of claim 31, wherein the molecule comprising B-10 contains about 1 to about 20 boron atoms, inclusive.
- 37) The compound of claim 31, wherein the molecule comprising B-10 is an amino acid, a carbohydrate, a nucleoside or a carborane.

- 38) The compound of claim 31, wherein the molecule comprising B-10 is o-nido-carborane, m-nido-carborane or p-nido-carborane.
- 39) The compound of claim 31, wherein the molecule comprising B-10 is o-carborane.
- 40) The compound of claim 31, wherein the molecule comprising B-10 is directly linked to the 6-position or to the b, d or e-carboxamide group of the compound of formula I.
- 41) The compound of claim 31, wherein the compound of formula I is linked to the molecule comprising B-10 through a linker.
- 42) The compound of claim 41, wherein the linker comprises a non-metallic radionuclide.
- 43) The compound of claim 41, wherein the linker is about 5 angstroms to about 50 angstroms, inclusive.
- 44) The compound of claim 1, further comprising a detectable radionuclide.
- 45) The compound of claim 44, wherein the detectable radionuclide is a non-metallic radionuclide.
- 46) The compound of claim 45, wherein the non-metallic radionuclide is Carbon-11, Fluorine-18, Bromine-76, Iodine-123 or Iodine-124.
- 47) The compound of claim 44, wherein the detectable radionuclide is directly linked to the compound of formula I.
- 48) The compound of claim 44, wherein the detectable radionuclide is linked by a linker to the compound of formula I.
- 49) The compound of claim 48, wherein the linker is of the formula W-A wherein A is (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₃-C₈)cycloalkyl, or (C₆-C₁₀)aryl, wherein W is -N(R)C(=O)-, -C(=O)N(R)-, -OC(=O)-, -C(=O)O-, -O-, -S-, -S(O)-, -S(O)₂-, -N(R)-, -C(=O)-, or a direct bond; wherein each R is independently H or (C₁-C₆)alkyl, and wherein A is substituted with one or more non-metallic radionuclides.
- 50) The compound of claim 48, wherein the linker is about 5 angstroms to about 50 angstroms, inclusive.
- 51) The compound of claim 48, wherein the linker is a divalent peptide or amino acid.
- 52) The compound of claim 48, wherein the linker is poly-L-glutamic acid, poly-L-aspartic acid, poly-L-histidine, poly-L-ornithine, poly-L-serine, poly-L-threonine, poly-L-

tyrosine, poly-L-leucine, poly-L-lysine-L-phenylalanine, poly-L-lysine or poly-L-lysine-L-tyrosine.

- 53) The compound of claim 48, wherein the linker is linked to the 6-position of the compound of formula I or is linked to the a b-, d- or e-carboxamide group of the compound of formula I.
- 65) A compound of formula I



linked

- 1) to a molecule comprising B-10 or a chelating group comprising Gd-157; and

- 2) to at least one molecule of the formula Q-L-W-Det, wherein X is CN, OH, CH₃, adenosyl, a molecule comprising B-10 or Q-L-W-Det; wherein each Det is independently a chelating group comprising a metallic radionuclide; each L is independently a linker or absent; and each W and Q are each independently -N(R)C(=O)-, -C(=O)N(R)-, -OC(=O)-, -C(=O)O-, -O-, -S-, -S(O)-, -S(O)₂-, -C(=O)-, -N(R)-, or a direct bond; wherein each R is independently H or (C₁-C₆)alkyl;
- or a pharmaceutically acceptable salt thereof.
- 66) The compound of claim 1 or 44, wherein the compound of formula I is also linked to a group comprising Gd-157.
- 67) The compound of claim 66, wherein the group comprising Gd-157 has the formula Q-L-W-Det, wherein X is CN, OH, CH₃, adenosyl, a molecule comprising B-10 or Q-L-W-Det; wherein Det is a chelating group comprising Gd-157; L is a linker or absent; and W and Q are each independently -N(R)C(=O)-, -C(=O)N(R)-, -OC(=O)-, -C(=O)O-, -O-, -S-, -S(O)-, -S(O)₂-, -N(R)-, -C(=O)-, or a direct bond; wherein each R is independently H or (C₁-C₆)alkyl.
- 68) A composition comprising a compound of any one of claim 1-53 or 65-67 and a pharmaceutically acceptable carrier.
- 69) A method of treating a tumor in a mammal in need of such treatment comprising administering to the mammal an effective amount of a compound of any one of claim 1-53 or 65-67 in combination with a pharmaceutically acceptable vehicle; and administering neutron capture therapy.
- 70) A method for imaging a tumor in a mammal comprising administering to the mammal a detectable amount of a compound of any one of claim 1-53 or 65-67; and detecting the presence of the compound.
- 71) The method of claim 70, further comprising treating the tumor with neutron capture therapy.